Data Regarding Rural Electrification Administration Telephone Systems

The accompanying tables represent information regarding the principal features of a representative group of Rural Electrification Administration telephone system which are important from the standpoint of transmission, subscriber signaling and supervision, crosstalk and inductive and structural coordination.

These data have been summarized in accordance with a memorandum prepared by Dr. H. M. Trueblood entitled "Collection of data regarding REA Telephone Systems" dated April 10, 1952, revised November 8, 1952.

The tables cover information from recent area coverage designs, and include the data shown below. Details for each system included in the study are shown in the tables.

Table 1 - Offices and Subscriber Lines. This table covers the number of Central Offices, and the initial and ultimate number of subscriber lines and stations for each system studied and totals for the group.

Table 2A Trunk Line Plant - Carrier Frequency Trunks

Table 2B Voice Frequency Trunks

Table 3A Subscriber Loop Lengths - Longest Loop for Each System

Table 3B Distribution of Subscribers by Zones

Table 3C Distribution of Subscriber Lines Terminating in Each Zone

Table 3D Characteristics of Subscriber Loops Terminating in Each Zone

Prepared by

Technical Standards Division
Rural Electrification Administration
Department of Agriculture
Washington 25, D. C.

DEPT. OF AGRICUL

Date Regarding hurst bleetelifeation Administration Telernoment yaren

. Maltaa broom Lampheria

These dots are been survey set in accordance with a meson. renduce prepared by low M. M. Thurstlood entitled "Collecte ". tion of data regarding Min Telechma Systems dated detel .

stend, and include the date shows below, britis for each equited included in the start are shown in the calibes.

arrays alder aid! Leastly roll order bas deciled wit blder adentite on Contract end the mittel and witingto notion of secestive lines and stables for cach. system . . query out to's elected bee hothere

Observeboltstire of Schneriber Loops Teithings

The first parties of

nothertaletabl nutstofflindenta ferust wirdinglade in Josephanoli and all merenantings.

841004

Table 1. Office and Subscriber Lines

Project		Number of	. Init	ial	Ultim	ate
Number	System	Central Offices	Sub.	No. of Subs .	Sub. Lines .	No. of Subs
Colorado 501 Georgia 510 Georgia 515 Iowa 503 Iowa 508 Kansas 531 Louisiana 504 Louisiana 506 Michigan 503 Mississippi 506 New Mexico 502 New Mexico 504 N. Carolina 509 Tennessee 521 Tennessee 521 Tennessee 544 Texas 528 Texas 544 Texas 561 Texas 562 Utah 501	Roosevelt County Rural Clovis Telephone Co.	26211356126713642244	188	308 1,625 342 1,197 337 821 1,883 1,207 612 1,592 818 705 280 511 1,306 583 1,135 276 359 541	260 240 532 277 - 300 610 - 290 100 221 - 210	520 500 1,502 449 800 1,900 835 400 755 972 824
Total 20 syst Average per S Average per S		78 3.9				
Average per	system central office subscriber line	28			3,450 313.6 123.2	
Percent inc (11 syste	rease over initial ms)				33%	35%

NOTES: All of the above central offices are non-attended dial central offices except one--Larose central office of the Lafourche Telephone Company, Louisiana 506, which will have six toll positions in addition to the dial equipment.

There were no manual main central offices, satellite offices, or concentrator units included in the above system.

Area coverage designs for systems which do not show the ultimate conditions did not include this information.

Colle 1. Office and Subscriber Lines

	, da8	ia: io .on		To Assistant Ass	System	Project
\$20 3,502 3,502 3,502 3,500 8,500 8,35 1,900 8,35 8,35 8,35 8,35 8,35 8,35 8,35 8,35	232	308 1,625 1,625 1,197 1,197 1,207 1,206 1,206 1,306 1,	188 209 1,046 1,046 1,050 1,050 2,05	THERESONALONDERSON	Miggins Telephone Assn. Fublic Ser. Tel. Co. Brentley Telephone Co. Mutual Telephone Co. Tormers Mut. Tel. Co. LaSalie Telephone Assn. LaSalie Telephone Assn. LaSalie Telephone Co. Lawronce Tolephone Co. Lawronce Tolephone Co. Rocsevelt County Rurel Rocsevelt County Rurel Rocsevelt County Rurel Padddnville Tel. Co. Tedn Lakes Tel. Co. Tesn Lakes Tel. Cop. Tesnicy Tel. Cop. Southwest Texas Tel. County Farmers	Colorado 501 Goorgia 510 Goorgia 515 Louis 503 Louis 506 Kansas 531 Louis ana 506 Mignigan 505 Texas 506 Texas 506 Texas 506 Texas 506 Texas 506 Texas 506
		24,638 9,138 230.7 2,023	7,548 372,6 95,5	ey R.E		Total 20 ayat Average per 6 Average per 0 Average per 2
5.7	3,650 313.6 123.2 333.6			85	systems system central office subscriber line rease over initial	Poteis - ll Average per Average per

MONTS: All of the above control offices are non-attended dial central offices except one--Larose central office of the lafourene Telephone Company, Louisiana 505, which will have his tell positions in addition to the dial equipment.

There were no menual main control offices, sateliate effices, or conceptrator units included in the above system,

Area coverage designs for systems which do not show the withmate

Table 2A Trunk Line Plant Summary of Carrier Frequency Trunks

Project Number	S ys tem	Number of Trunks	Pole Line -Miles	Physical Circuit - Miles	Two-Way Carrier Channel - Miles	Maximum Length of Trunk	Average Length of Trunks
Iowa 503	Mutual Eel. Co.	2	25.8	25.8	51.6	25.8	25.8
Ga. 510	Public Service Tel. Co.	31	118.7	194.6	1044.3	47.7	33.7
La. 506	Lafourche Tel. Co.	6	46.0	92.0	276.0	46.0	46.0
N.Mex.502	Roosevelt County	10	85.5	134.2	285.4	37.9	28.5
N.Mex.504	Clovis Tel. Co.	7	44.0	44.0	308.0	44.0	44.0
Tenn. 544	Twin Lakes	6	21.95	43.9	131.7	21.95	21.95
Tex. 544	Taylor Tel. Co.	6	18.5	18.5	111.0	18.5	18.5
Tex. 562	Valley Tel. Co.	1	48.0	48.0	103.5	48.0	25.9
	Totals	72	408.45	601.0	2311.5	48.0	32.1

5.6 3.8

	of channels on pole line of channels on physical circuit	
Makeup of phy	ysical circuits	

.104	Cw	non-phantomed	220.3
.104	CW	side circuit of phantom	196.4
		copper non-phantomed	132.5
.104 F	HD	copper side ckt. of phantom	51.8

Table 2A Trusk Line Plant Sugmary of Carrier Frequency Trusts

dagasi lo	monicali digasd lo buri	Carrier Cimonel	Paysinal Circuit - Miles			System	Project
. 8,38	8.29	SL.6		25.0		Status Tel. Co.	Iowa 503
33.7	17.71		. ask.6	T.BEI		Public Service Tel. Co.	da, 510
	16.0	276,0	92.0	0.81	8.	Lafourche Tel. Co.	La. 506
2,89	37.9	4.288	131.2		. O.	Hosseyelt County	N.Mox.502
Deld	- Chald	8	O. M.	Ordit	. 8	Clovis Tel. Co	N.Mex.504
21.95	20.10	1.161	RaEd .	22,35		Twin Laken	Tome Sab
18.5	18,5	. 0, 111	3.8.5	18.5		Taylor Tele Co.	Texa Shin
25,9	F to G a co	103.5	0.8,0	0.8/1		Valley Tel. Co.	Tex. 562
32.1	. 0.84	· Caller	0.106	23.800	27	elsjoT	

Average number of channels on pole line
Average number of channels on physical circuit

3.8

.10h Ow mon-phericosed 220.3 .
.10h Ow side sircuit of phanton 196.h .
.10h HD copper ron-phantoned 132.5 .
.10h HD copper uide ckt. of phanton 51.8

w -5 m

Table 2B, Trunk Line Plant Summary of Voice Frequency Trunks in Cable and in Cable and Open-Wire

Project Number	System	Number of Trunk Groups	Number of Trunks	Trunks per Trunk Group	Maxi- mum Length Miles	Open	Miles Circuit Cable	Average Length Miles	No. of Trunks Repeat- ered
Colo.501	Wiggins Tel. Co.			1	3/	125		7 (*)	an maga-sagan an maganagkan dipanan maganagkan an ang an
Co 530	Toll trunks	2	9	4.5	16	135	-	15	
Ga. 510	Public Service Toll trunks	1	*1	7.0	37	37		37	
	Intra system	1 8	30	3.75		365.9	1	12.2	
Ga. 536	Bullock County	0)0	2012	270)	207.9			
da. 550	Toll trunks	3	11	3.67	12.9	111.7	11.8	11.23	-
	Intra system	3	16	5.33		124.2	54.6	11.12	_
Town 503	Mutual Tel. Co.		10	2000			74.0		
Tona Jos	Toll trunks	4	11	2.75	25.8	183.2	24.6	17.2	***
La. 504	LaSalle Tel. Co.								
	Toll trunks	5	24	4.8	57.9	909.5	-	37.9	-
	Intra system	5	20	5.0	16.1		122.4	10.0	-
La. 506	Lafourche Tel.Co.								
	Toll trunks	4	20	5.0	25.9	283.3	23.5	13.1	-
	Intra system	6	60	10.0	15.3	-	512.0	8.5	-
Mich.503	Lawrence Tel. Co.								
,	Toll trunks	1	洲	1.0	9.0	9.0	-	9.0	
Miss.506	Bay Springs							0	
	Intra system	1	25	25.0	11.0	-	271.3	11.8	-
N.Mex502	Roosevelt County							-0.0	
	Toll trunks	4	12	3.0	24.8	220.5	1	18.3	-
	Intra system	2	6	3.0	20.8	110.4	-	18.4	-
N.Mex504	Clovis Tel. Co.				- 0 0	000 0		01 0	
	Toll trunks	2	*14	14.0	23.0	322.0		24.0	-
-0.1	Intra system	. 2	14	7.0	14.0	-	140.0	10.0	-
Tenn.544	Twin Lakes	,		~ ~	10 (01 7	000 0	25.2	16
	Toll trunks	6	*15	2.5	49.6		282.8	25.2	10
m	Intra system	6	10	2.2	21.9	24.2	55.7	10.0	
Tex. 528	Wes Tex.Tel.Coop	1.	25	6.2	14.7	153 0	122.7	11.0	20
M (1)	Toll trunks	4	25	0.2	7401	ال ورويا	75501	77.00	20
Tex, 544	Taylor Tel. Coop Toll trunks	10	40	4.0	20.4	3/17-2	127.8	11.7	12
	Intra system	3	11	3.7	17.4	69.9		13.3	-
	Inora system	,	alle alle	7.1	2104	0,47	1,500		
	0						1		

Table 28, Trunk Line Clast Surmary of Voice Frequency Trunks in Cable and in Cable and Open-Wire

No. of Tranks Repeat	Average Langth Miles	Circuit	Upen	num Length	Trunks per Trunk Group	Trunks Trunks	Jon Daniel	System	Project
								Wiggins Tel. Co.	COLO,501
**			282		5.4			Toll trusics .	0.00
	37			75	0.5	£% .		annur fioT	PAC NOW
44			9.135	Sis	3.75			Intra system	
								Bull ook County	Ga. 536
	ESailt		Tall.	3.2.9	Tack.	II			
-	SLALL	Shire	3.201	2651	2,33		(_	Intra system	
								Nutual Tels Co.	
- 10	S.FI	Sloop	5,001	8.35	5.75			Toll trunks	
*3.	37.5	*0	e agress		8.4		2	LaSalie Tel. Co.	105 'eg
24	0.01	A. SOL			5.0			meduva asunī	
**		ç &						aco. ist odanotal	30% , 61
No.	Late	23.5		6.55	5,0				
	8.5	512.0			20.00		. 3		
								Laurence Tel. Co.	
	0.6	40	0.0		0.5		r		
	10 ***	The second						Bay Springs	905*38501
	8,11		105	0.11	25.0		2	Intra syrben	0.05-14.0
	18,3	ro-	2.099	8-45	3,0	SE	ŧ.	Roosevelt County	PINCKELL [®] II
6			d.CLE	8.00	3.0		· ·	Toll trunks Intes system	
	1 028.000		A B WALL	0.43				Clevic Sela Co.	
1844	O. MS		322.0	23.0	Out		<u> </u>	tolaura Liel	Machine as in
-				Deill	7.0			Latra system	
								sated niel	Tenn.Shi
35		8,989		90-69	5.5	7.12	*	Toll transmis	
	10,6			ReES	2.2	QE	0	modera eruai	
						-		Wes Tex. Tal. Coop	
	0.11	1.1022		Yeal	240	28	4	Toll trunks	
2.2	22.7	8.501	9.545		Call	Ou	91	Taylor Tel. Coop	Part sunt
	13.3	75.8			7.5	11		Intra system	
	-	1	1	-	1	1			

Table 2B, Trunk Line Plant - continued Summary of Voice Frequency Trunks in Cable and in Cable and Open-Wire

							4		
again condi-		Number	Number	Trunks	Maxi-	Total	Miles	Average	No. of Trunks
Project	System	OI		per Trunk	mum Length	Trunk	Circuit	Length	Repeat-
Number		Trunk Groups Trunks		Group	Miles	Open Wire	Cable	Miles	ered
Tex. 567	Southwest Texas								7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
ICA. JOL	Toll trunks	2	5	2.5	20.6	79.6	4.2	16.7	•
	Intra system	2	7	3.5	11.0	42.6	5.6	6.9	-
Tex. 562	Valley Tel. Coop.				100	2/0 0	~ ~	16.6	
	Toll trunks	4	*10	2.5	48.0	160.8	5.7	11.8	
	Intra system	3	12	4.0	17-4	132.8	0.7	11.0	
Tenn.521	DeKalb County Toll trunks	1	12	12.0	7.2	86.4	-	7.2	-
Utah 501	Emery County Toll trunks	1	6	6.0	17.0	60.0	-	10.0	-
						-			
Total to	oll trunks	53	216	4.1	57.9	3141.9	603.1	17.3	-
Total in	ntra system trunks	40	211	5.3	21.9	976.5	1246.3	10.5	•
Grand	total	93	427	4.6		4118.4	1849.4	14.0	48

* Does not include Carrier Frequency trunks shown in Table 2A

Makeup of Open Wire Cir	. a set	Makeup of Cable Circuits
Kind of wire	Circuit Miles	Gauge & loading Circuit Miles
.104 HD copper non-phantomed " side of phantom " phantom .104 CW 40% non-phantomed " side of phantom " phantom .104 CW 30% non-phantomed .080 CW 40% non-phantomed " " side of phantom " " phantom " " phantom " " phantom	1,461.7 155.8 77.9 1,273.3 451.4 225.7 153.0 11.4 75.2 37.6 195.4	13 ga. loaded 6.0 19 ga. non-loaded 36.3 19 ga. loaded 995.6 22 ga. non-loaded 78.0 22 ga. loaded 493.8 24 ga. non-loaded 9.0 24 ga. loaded 189.9 26 ga. non-loaded 21.0 26 ga. loaded 19.2 Total 1,848.8
Total	4,118.4	

Table 25, Trusk Mane Flant - continued Summary of Voice Frequency Trusks in Cable and in Cable and Open-Wire

No. of Trunks Hapeat- ered	Average Length Miles	Circuit	Tetal Trunk Open	Maxi- mum Length Miles	Trunks per Trunk Oroup	ho hours	Number of Trunk Groups	Project System
							aquo to	
*.	N. A.E. C.O	5.6	3.67		2.5	35	S	Tex. 561 Southwest Texas Toll trunks Intra system Tex. 562 Valley Tel. Coops
69. 69.	16.6		1.60.8	18.0	Z.S D.O	*3.0 1.2		Tenn.521 Dekalb County
P21,			d.58	7.2	O-SI		L	Toll trunks Utah 501 Enery County
, *a*,	0.01	eth.	0,00	1.7.40	0.0			enhant LioT
n-,	27.03	£03.1	e. Lilie	57.9	Led	918	53	Total toll trunks
**:	10.5	1266.3	976.5	6*12	5.3	211		Total intra system trunks
6,6	0.11	1.0001	4.8165		J.s.f.	754	93	Grand total

^{*} Does not include Carrier Frequency trunks shown in Table 2A

Hakeup of Open Wire Circults

Makeup of Caple Circuits

TO SECURE ASSESSMENT OF PRESENT	The state of the same of the s	
Gauge & loading Circuit Hiles	Circuit Hiles	
13 ga. loaded 36.3 19 ga. non-loaded 36.5 22 ga. non-loaded 76.0 22 ga. non-loaded 76.0 21 ga. non-loaded 9.0 21 ga. non-loaded 9.0 21 ga. non-loaded 9.0 25 ga. loaded 19.9	dD copper non-chantoned 1,161.7 side of phanton 155.0 phanton 77.9 side of phantomed 1,273.3 side of phantom 225.7 phantom 225.7 ch 305 non-chantomed 153.0 ch 505 non-chantomed 153.0 s " side of phantomed 11.0	,104, ,104,
8,848,£ fetoT	05 steel non-phoniconed 195.1	*109=
	d.BII.d IstoT	

Table 3A Subscriber Loop Lengths

		Longe	st Loop)				- source destroyer - control denter	anganyapan adjust disembler
	Project	System or Exchange	Over-	Open	Wire		Gauge	tive	Loop Resis-
	Number	System of Exemange	Length Miles	Miles	Gauge& mater ial	Miles	& Load ing	Trans.	ohms
•••	Col. 501	Wiggins Telephone Assn.	14.50	11.25	109S 104CW	•75	1 9g NL	29	988
	Ga. 515	Brantley Telephone Co.	20,93	12.00	109S 104CW	•23 •	22g NL -	+1.38	1,182
	Ga. 536	Bullock County Tel. Coop. Portal Brooklet Portal	18.02 18.10 17.15	17.60 17.23 11.60	080CW 080CW 104CW	.87 5.55	22gH88	-1.99 -1.05 +.45	804 860 1,248
	Iowa 503	Mutual Telephone Company	14.00	6.80 4.70	109S 104CW	2.50	22g NL -	+.04	1,011
	Iowa 508 Kan. 531	Farmers Mut. Tel. Co. United Tel. Assn.	8.00 18.40	6.00 2.00 14.20	109S 109S 104CW	2.28	22gNL 22gNL	+•92 -•64	750 988
•	La. 504	LaSalle Tel. Co., Jena	14.86	6.44 5.28	109S 104CW	1.35 1.79	19gH88 22gH88		994
		do	12.59	3.97 3.78	109S 104CW		19gH88 22gH88		926
		do	11.98	7.18 2.08	1098 104CW	2.73	22gH88	+.04	1,008
	La. 506	LaFourche Tel.Co.Galliano	5.00	-			22gH88 2l4gH88		1,012
		Leeville Grand I sl e	9.85	8.15	104Cop	4.40	22g NL 22gHlll 2llgHlll	-	375 877
	Mich.503	Lawrence Telephone Co.	8.70	3.75 2.85			22gNL 24g M	05	760
	Miss.506	*Bay Springs Tel. Co. Bay Springs Exchange	17.97	8.67	4	.66	19gH88 22gH88 24gH88	1	1,275
		Soso Exchange	14.45	•94	1	1.70	19gH88 22gH88 24gH88	+.07	1,286
-	*!N	Note: 40 local battery tele	phone s	sets to	be used	l in thi	s excha	ange	

Table 3A Subscriber Loop Lengths - continued

Longest Loop

Project Number	System or Exchange	Over- all Length Miles	Open Miles	Gauge&		Gauge & Load- ing	02.00	Loop Resis- tance ohms
N.Mex.502	Roosevelt County Rural Floyd Arch C.O. Elida C. O.	29.8 21.4 27.7	29.4 19.9 27.3	104CW 104CW	1.50	22g NL 22g NL 22g NL	-2.53 -1.14 -2.36	821 766 769
N.Mex.504 N.Car.509	Clovis Tel. CO.	17.0	14.0 7.03 3.69	109S 109S 104CW	3.00	19g NL 22gH山山	#5.76 #.4	1,320
Tenn. 544	Twin Lakes Tel. Coop.	12.08	5.23	109S 104CW	4.05	22gH88	f .75	1,205
Tex. 528	Wes Tex Tel. Coop Lomax	16.0	9.00 7.00	109S 104CW	-	-	-1.05	929
	Richland .	16.0	10.50	1095 104CW	quat	••	64	992
Utah 501	Courtney Lenorah Emery County Farmers	19.9 15.8 10.75	18.30 9.90 8.50	104cw 104cw 080cw		19g NL 19gH88 22gNL	# .25 # .04 # .90	767 838 755

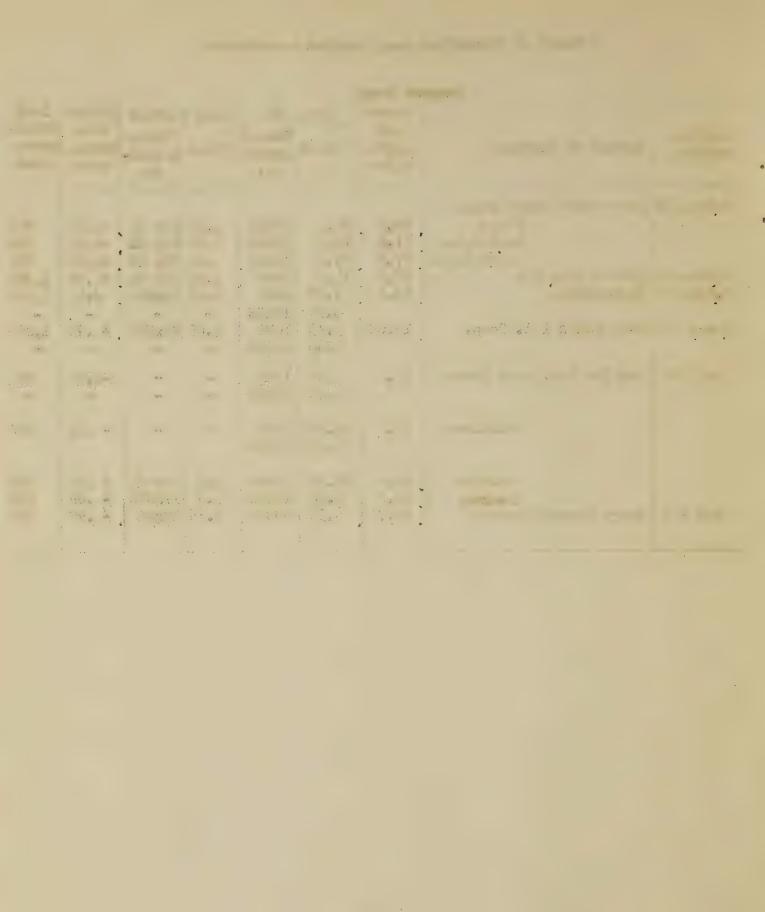


Table 3-B, Subscriber Loop Lengths

Distribution of Subscribers by Zones

· · · · · · · · · · · · · · · · · · ·		matal .	Date 124 bigsion 40 Min	polymous disputação servido de 200-0-0.	May proper taken up youther trees	Zo	ne	galan ad uta Arris terreforilish Adi F. S	and with a specific transfer con-	gg die gesieften richtige
Project		Total Subscri	- 1	2	3	4	5	6	7	8
Number	System Exchanges	bers Initial		4 to 6 mi.		8 to	10 to 12 mi.	12 to 14 mi	14 to 16 mi	over 16mi
Colo. 501	Wiggins Tel. Co. Wiggins Co. Hoyt Co.	199 109	133 53		13 14	4 6	3 5	6	Geo.	-
	Total	308	186	70	27	10	8	7	-	-
Ga. 515	Brantley Tel. Co. Nahunta Hoboken	251 91	183 82		13 2	22	0	11	3	2
	Total	342	265	24	15	22	0	11	3	2
Iowa 503 Iowa 508	Mutual Telephone Co. Souix City Farmers Mutual	1,197	847	141	113	70	18	8	-	••
	Shellburg	337	264	60	13		-	-	-	-
Kan. 531	United Tel. Assn. Spearville) Hanston)	720	529	32	58	44	49	8	-	7
	Kingsdown	101.	56	27	.12	4	2	-	-	
Mich. 503	Total Lawrence Tel. Co.	821 612	585 444		70 36	48	51.	8	#	-
N.Mex. 504	Clovis Tel. Co. South Clovis Pleasant Hill Ranchvale Bellview Grady Weber City Ragland	64 89 163 122 122 55 90	19 23 52 46 51 12	12 22 16 17 10	11 20 30 22 17 9 14	9 10 25 18 18 9	12 9 7	2 13 12 8 6 5	5	-
	Total	705	228	111	123	102	70	52	19	-
N.Car. 509 Tenn. 521	Yadkinville Tel. Co. Yadkinville Dekalb County	280	139	37	54	40	10		-	-
Tellis Ser	Alexandria Liberty Temperance Hall	204 202 105	200 175 79	20		- 6	-	-	-	***
	Total	511	1,51	29	22	6	-	-	-	-
Tex. 528	Wes Tex. Tel. Coop Lomax Richland Courtney Lenorah	42 72 80 158	15 20 29	14	12	8	5			
	Total	352	11.	3 49	65	50	37	2]	4 (3

A STATE OF S

and the state of t

1007

4 2

Table 3-B, Subscriber Loop Lengths - continued

Distribution of Subscribers by Zones - continued

-		ersonspillenmente terrative, destruite en emercative de replantarionarios que dissiliante que que qui que qui continuidante en destruitante de la continuida de	metal.	Martin Apparent of Apparent Schoolsen	gang at malgarier in a strategy of	gggs o , anglessandide ; depless de	Zo	nes	angere come in the later proper date.	and the second second second	
	Project	Creation Evolution	Total Subscri-	1	2	3	4	5	6	7	8
•	Number	System Exchanges	bers Initial	O to	4 to 6 mi.	6 to 8 mi.	8 to 10 mi.	10 to 12 mi	12 to	14 to 16 mi	over 16mi
,	Utah 501	Emory County Farmers Cleveland Castle Dale Ferron Emery	130 227 118 66	112 214 105 59	2	7 2 1 3	- 5 - 2	-		**	600 600 600
		Total	541	1,90	27	13	7	4	grade contract of the contract	-	040
		Grand Total	6,006	4,015	736	551	358	198	107	30	11
		Percent in each zone	100.00	66.85	12.26	9.17	5.96	3.30	1.78	*50	.18

Summary of 11 Systems
Distribution of Subscribers by Zones

					£		ì
Zone Number	Control	Total Number of Subscribers	Average per System	Percent of Total	Area of Zones - Square Mile	Percent of Total Area	Average Number Sub scribers per Sq. Mi
1	O to 4 mi.	4,015	365	66.8%	32	6.3%	11.4
2	4 to 6 mi.	736	67	12.3	40	7.8	1.7
3	6 to 8 mi.	551	50	9.2	56	10.9	0.9
14	8 to 10 mi.	358	32	5.9	72	14.1	0.4
5	10 to 12 mi	198	18	3.3	88	17.2	0.2
6	12 to 14 mi	107	10	1.8	104	20.3	0.1
7	over lh mi.	42	4	0.7	120	23.4	
	Totals	4,006	51,6	100.0	512		

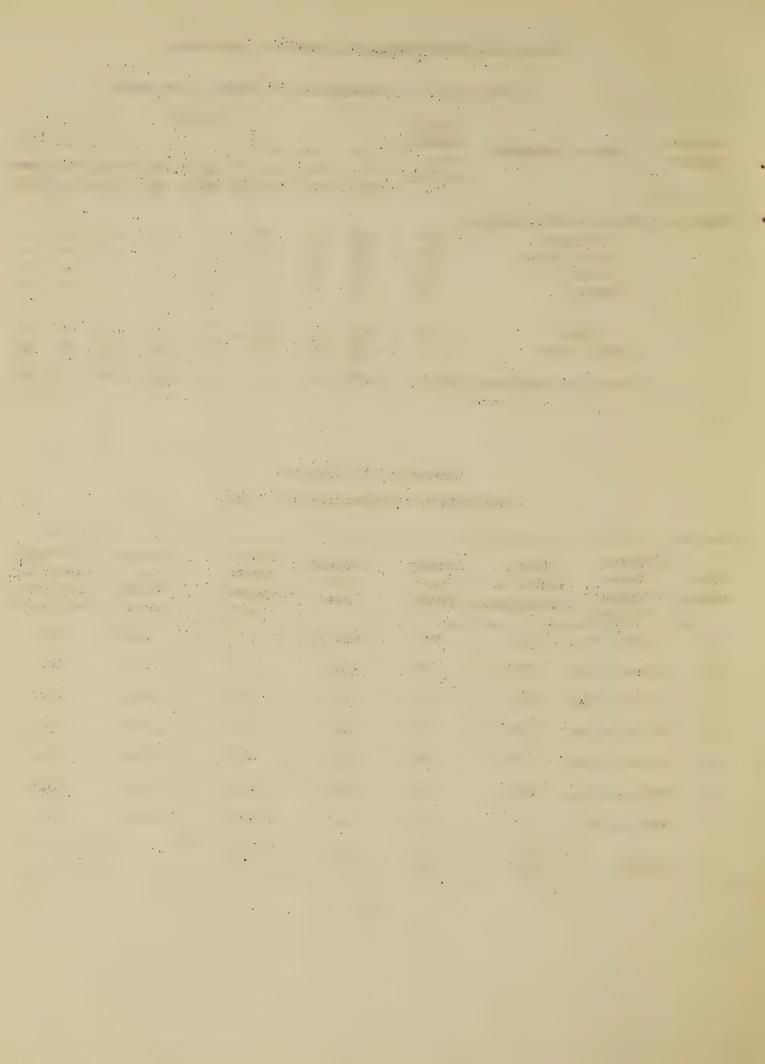


Table 3-C, Subscriber Loop Lengths

Subscriber Lines Ending in Zones

1	kulgis dinnen gelesen sussiselet i spisopilalessolupusilpi en en teglessisku de en en debuulpi ususk sussissionis va	Total		******	a. v. sedertilderen das e deser deletere	Zoi	nes		aquia i mantra amang	-se p. djuar klikelije ritinde vit-tek
Project		Subscri	1	2	3	4	5	6	7	8
Number	System	ber	0 to	4 to	6 to	8 to	10 to	12 to	14 to	over
		Lines	4 mi.	6 mi.	8 mi	10 mi	12 mi	14 mi.	16 mi	16mi
Colo. 501	Wiggins Telephone Co.	120	76	25	10	5	2	2		ents.
Ga. 515	Brantley Tel. Co.	188	168	4	6	4	0	1	3	2
Iowa 503	Mutual Tel. Co.	437	383	14	17	14	8	1	0	0
Iowa 508	Farmers Mutual	209	1914	8	7	-	who		-	desp
Kansas 531	United Tel. Assn.	325	277	10	13	10	8	7	-	
Mich. 503	Lawrence Tel. Co.	190	154	27	8	ı		-		400
N. Mex.504	Clovis Tel. Co.	255	107	17	35	36	23	26	11	-
N.Car. 509	Yadkinville	75	36	11	12	11	5		•	-
Tenn. 521	DeKalb County	165	142	14	7	2	•••		-	-
Tex. 528	Wes Tex. Tel. Coop	98	31	10	15	16	10	6	14	6
Utah 501	Emory County	310	289	12	5	2	2	-		-
	Totals	2,372	1,857	152	135	101	58	43	18	8
	% distribution by zones	100.00	78.29	6.41	5.69	4.26	2.45	1.81	•76	•33
Subscriber	stations by zones	6,006	4,015	736	551	358	198	107	30	11
Average nu	able 3B) umber of stations in each zone	2.53	2.16	4.84	4.08	3.54	3.41	2.49	1.67	1.38

· Me 1 ... _____ ٠. Il all المالة. LINE E WATER AT ME ----

A strange page resource of the strange regions and the strange regions are strangered regions and the strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions and the strangered regions are strangered regions are strangered regions and the strangered regions are strangered regions and the strangered regions are strangered regions are s	-							
			Open W	lire Portion	Cable	Portion	Effec- tive	Loop
Project Number	System	Loop Length Miles	Miles	Gauge and Material	Miles	Gauge & Loading	Trans- mission db	Resis- tance- Ohms
			Zone 1,	O to 4 mile	s from	Central	Office	i
	Approximately 66% in Zone 1 and ger this xone. Cable and 24 ga. and the cables is .109-13 sentative subscri	erally es servi e open 85 steel	the aer ing subs wire po	ibers in the ial cable placeribers in the rtion of the Following a	e systemal all this zone	ms studie so is con ne are no	d are loca centrated n-loaded 2	in 22 ga.
Colo.501	Wiggins Tel. Co.	3.27		.109-135 st		19ga NL		250
do Kan. 531	do United Tel. Assn.	3.14	3.14	.109-135 st	1 1	24ga NL	-4.85	240 311
do	do	4.00	3.30	.109-135 st	1	24ga NL	-3.68	444
La. 504	LaSalle Tel. Co.	2.36	1.89	.109-135 st		24ga NL	-5.74	259
do	do	2.04	_		(1.62 (1.02	19ga NL 22ga NL	-4.60	336
do	do	2.83	2.18	.109-135st	.65	24ga NL	-4.95	327
do do	do do	3.03 3.22	2.40	.109-135st	.63	24ga NL 24ga NL	-4.83 -5.03	335 356
do	do	3.48	3.22	.109-135st	-26	22ga NL	-5.27	309
do La. 506	do	3.97	3.32	.109-135st	.65	24ga NL	-3.95	405
La.500	Lafourche Tel. Co.	1.21	-		(.53 (.68	22ga NL 24ga NL	-6.80	278
do	do	1.89	-		1.89	24ga NL	-11.37	519 433
do	do	1.97	all tracts of our Marie		(1.04 (-93	22ga NL 24ga NL	-4.92	433
do	do	2.14			2.14	22ga NL	-5.17	366
do	do	2.23	.30	.109-135st	(1.29	22ga NL	-4.62	416
do	do	3.21			(1.51 (1.70	24ga NL 24ga NL	93	7 26
do	đo	3.78			(2.95	22ga NL	10	734
do	do	3.98			(.83 3.7l ₁ .2l ₄	24ga NL 22ga NL 24ga NL	05	7 05

the first and continued to the first the continued to the

THE TENED OF THE PROPERTY AREA STORES OF THE STREET OF THE

		adderladen i Andrewskipskipskipskipskipskipskipskipskipskip	Loop	Open	Wire Portion	Cable	Portion	Effec-	Loop Resis-
٠	Project Number	System	Length Miles	Miles	Gauge and Material	Miles	Gauge & loading	Trans- mission db	tance - Ohms
		ng e a ge rtigdeseggere aderderesse erter destigte dettablische distribute	2	one 1	- continued				
•	Mich.503 N.C. 509 N.Nex50L do do do do	Yadkinville Clovis Tel. Co. do do do do Twin Lakes	3.80 3.10 2.75 3.00 3.00 4.00 4.00 3.63	2.00 1.60 2.75 2.00 1.50 1.00	.109-135 st .109-135 st .109-135 st .109-135 st .109-135 st .109-135 st	1.80 1.50 1.00 1.50 3.00 4.00 1.34	22 g NL 22 g NL 19 g NL 19 g NL 19 g NL 19 g NL 24 g NL 22 g NL	-2.10 -1.50 -6.10 -4.00 -3.80 -1.65 -2.48 -2.79 -7.04	480 380 230 237 245 331 340 543 170
	Utah 501 do do do	Emery County (Orangeville) do do	3.01 3.18 3.00 3.01	2.50	.080 CW	.68 1.33 1.40	55 g NT 55 g NT 55 g NT	-6.29 -5.35 -5.22	226 300 310
		Subtotals		42.23 8.49		11.21 21.49 12.14	19 ga NL 22 ga NL 24 ga NI		
		Total for 31 loops Average loop	95.56 3.08	50.72 1.63		1.45		-2.43	374

200	-01112	AUTOU			WHIT!		
		ill in E		- hea D. Heibl	\$ × <u>.</u>	1000	
A RESIDENCE OF THE PERSON OF T							
				•			
\$			•			~	

		Loop	Open	Wire Portion	Cable	Portion	Effec- tive	Loop Resis-
Project Number	System	Length Miles		Gauge and Material		Gauge & loading	Trans- mission db	tance Ohms
	Zo	ne 2, l	1 to 6	miles from Ce	entral	Office		
	This zone is beyond 24-gauge cable and extensions beyond t few cases 19-gauge the economic capaci Characteristics of	service he end cable : ty of a	e is ge of the is used aerial	nerally furni se cables ten , and where t wire lines, lo	ished brainati the numbaded c	ng in Zon her of li ables are	5 steel to e l. In nes exceed.	vire a ed
Kan. 531	Wiggins Tel. Co. United Tel. Assn.	5.75 5.20	5.0	.109-135st .109-135st		19 g NL 22 g NL 19 g NL	-2.7 -3.4 06	388 458 548
La. 504	LaSalle Tel. Co.	4.64	-	-	(1.79		**00	
do	do	5.55	3.79	.109-135st	1.76	22 g NL		408
do	do	4.83			(3.50		+ .07	525
		4.34	3.06	.109-135st	1.28		-2.35	558
do La. 506	do Lafourche Tel. Co.	5.02	7.00	•10/-10/50		22g H 88	05	1,012
do	do	7002			(1.10	24g H 88		
do	do	5.78	-57	.104 Caps		22ga H44	26	941
•	3.	11. 16	1.34	.104 Cap.		24gaH 444 22ga HL	-1.77	597
do	do	4.16	1.04	• Tott on be		24ga NL		
Mich.503	Lawrence Tel. Co.	5.80	4.00	.109-135st	1.80	22 g NL		633
	Clovis Tel. Co.	5.50	2.00	.109-135st	3.50	19g H 88	-3.00	415
do	do	5.00	3.00	.109-135st		19g NL	-2. 00 +.50	385
	Yadkinville	5.00	1.00	.109-135st	1.33	19g NL 22g NL	-4.54	390
	Emery County	5.06	3.73	.080 cw	.68	22g NL	-5.79	305
do do	do do	5.95	4.55	.080 cw	1.40		-4.15	428
do	do	6.36	6.06	.080 cw	.30		-5.94	165
	Totals for 17 loops	89.17	47.15		3.60 21.82 16.60	22g		Billioning provides required
	Average loop	5.24	2.77		42.02		-1.83	572

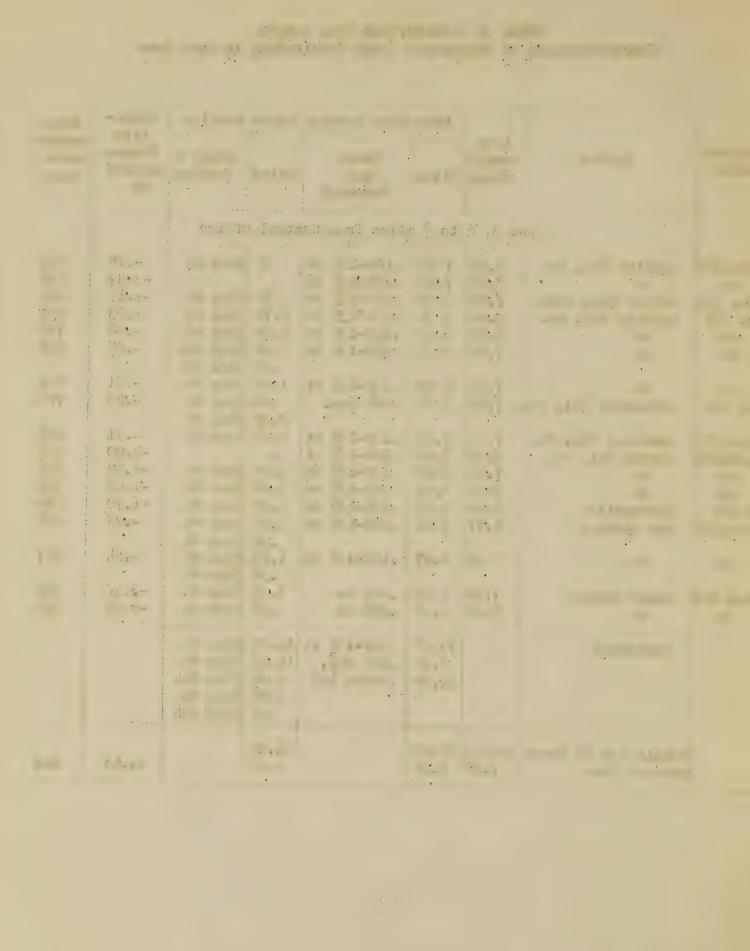
ones. The course of the control of the control ones of the control of the control

.

iris some in anyone the term terms of the limits of permanent 27 and the series of the sold of the series of the s

	3 (1) - 1/2"	We divide the					The second of th	
•							•	
le "- "	1 Jun 1		1 9	And the Contraction	1 40 0		and alies of the said	
1	1 40 00		113	1961 3 w 70 1 6		4 15 4 2	United Tere want	12. E.
	Later Marie		377	6115	Pole	Arms .	desirable Tells ver	
	162 100	The state of the s	1					
- ~ : :			12 12 1		- 1 ^{ng} 6	1 1		
				The state of an interpretation			. **	
200	C s see	1.27 2 S.A				5.300	.10.	
		. 78 g 188 .	1. 1. 1. 1. 1. 1					
m. y . m. y	A Page			(大)性 (一)()	2	Marks "	O.S.	
2 36 . 41	est,				89	W. 3	Larcorrene Rei. Co.	policies a social
			(1)				O'Y	15.35
1,451 .		.1 6		:	513	44 7		
	1 12			4 78 70 4 70		1 70 44		
es a					1 11 1		351	
E. S.					W. at			
		1 1 1 2 5 3 B	1 2 3	No see also also also also also also also also			en en en	
622	1112	1 13 3 15	00.3	Ja351-801.	to Dally		Lawrence Tolly Co.	
12 2 1	2 20		113.5	date in voice	Contract 1	0.13	TROVAL Well Co.	
				FOR ELEPTICE	1 12 g & 1	121.19 1	X23.5	138.4
1		100	1111	Jalle I. Hotel	tion &	187 12 ·	affern	
\$ 1 mm :			20 1	80 Th.	P 4		E SO A BUTSANCE	
					33.3		()).	
21.1m		A CONTRACTOR OF STREET						
26,50		1 1 1 1 1 1 1			1 3 - 1			
.01	21/20/10	in all their	11/2	100 0000	Chack .	deside		
					g			
			50.23					
			03.35					
			2000 22					

• Project Number	System	Loop Length Miles			Cable	Gauge &	Effective Trans- mission db	Loop Resis- tance Ohms
B Production in the production of the state	and the second section of the section of the second section of the section o) 		Material			40	
	Zon	ne 3, 6	to 8 1	miles from Ce	ntral	Office		
Colo.501	Wiggins Tel. Co.	7.95	7.20	.109-135 st	.75	19ga NL	78	615
do	do	7.00	7.00	.109-135 st	~		-3.47	535
Kan. 531		7.00	6.30	.109-135 st		22ga NL	-1.65	604
La. 504		6.06	3.34	.109-135 st		22ga NL	+.03	721
do	do	6.25	3.69	.109-135 st		22ga NL	08	720
do	do	7.09	4.54	.109-135 st		22ga H44	85	809
2		205	1 00	700 725		24ga H44	0.3	077
do	do	7.95	6.92	.109-135 st		22ga NL	81	811
La. 506	Lafourche Tel. Co.	7.01	3.79	.104 Cop.		22ga NL	23	794
W2 -1- CO	Y annual Mail Ca	2 (2	۲ 00	300 736		24ga NL	03	838
Mich.503		7.67		.109-135 st		22ga NL	+.91	535
N.Mex50L do	Clovis Tel. Co.	7.00 7.00	7.00 6.00	.109=135 st	7 00	19ga NL	-1.52	545
do	do	7.00	3.50	.109-135 st		19ga NL	-1.60	568
NC 509	Yadkinville	6.90	1.90	.109-135 st	1	19ga NL	+1.70	570
Miss.506		6.97	5.02	.109-135 st		22ga NL	25	697
PILESS JUC	bay opinigo	0.71	7.02	טט לנידיילטבי		24ga NL		
do	do	7.58	6.07	.109-135 st		22ga NL	64	687
40		1000	0.01	1207-255 50	{	24ga NL	024	
Utah 501	Emery County	7.00	5.67	.080 cw		22ga NL	-3.50	474
do	do	7.00		.080 cw		22ga NL	-5.07	392
		er i fy et i roelde-elser tra fanter (er d'ispe	da e regio una e l'inquill aggia analysis anguellagia e la l					
	Subtotals		73.48	.109-135 st	10.25	19ga NL		
			3.79	.104 cop.	15.41	22ga NL		
	THE COLUMN TO SERVICE AND ADDRESS OF THE COLUMN		11.99	.080cw 40%	2.30	22ga H44		
	and the same of th				2.96	24ga NL		
	- major dipunka is ammaka - alkan nikara dalah mininggan di mininggan principal napangalikan salah kan manaka masa				.25	24ga H44		
			0.0		22 22			
	Totals for 17 loops	120.43	89.26		31.19		7 17	(12
	Average loop	7.08	5.25		1.83	1	-1.41	643



			Open Wi	re Portion	Cable	Portion	Effec- tive	Loo
		Loop					Trans-	Resis
Project	System	Length		Gauge		Gauge &	mission	tance
Number	The state of the s	Miles	Miles	and	Miles	loading	db	Ohms
				Material	Lancopa manadalan transcript			1
	Zone							
Colo.501	Wiggins Tel. Co.	8.98	8.23	.109-135st	•75	19ga NL	33	694
		9.00	9.00	.109-135st			-2.45	686
Kan. 531	United Tel. Co.	9.10	8.40	.109-135st	.70	22ga NL	55	762
	LaSalle Tel. Co.	8.80	5.68	.109-135st		22ga Hlulu	13	912
			.57	.104 cw	-25	2liga Hlili		
do	do	9.00	6.44	.109-135st		22ga H44	+.06	931
La. 506	Lafourche Tel. Co.	9.84	8.14	.104 Cop.		22ga NL	-4.22	375
do	do	8.43	3.79	.104 Cop.	4.40	22ga H44	-1.05	877
uo l	ao	0.47	2017	arort oobs	.24	24ga H44		
x: 1 CO2	Tarmana Mal Ca	8.65	3 .7 5	.109-135st		22ga NL	08	749
Mich.503	Lawrence Tel. Co.	0.05	2.84	.104 cw	.36	24ga NL	00	147
	** ** * * * * * * * * * * * * * * * * *	0 20					+.49	790
NC 509	Yadkinville	8.35	6.75	.109-135st		22ga NL		478
	Emery County	8.96	8.28	.080 cw	•68	22ga NL	-4.56	
N.Mex504	Clovis Tel. Co.	9.00	8.50			19ga NL	60	688
đo	do	9.00	7.50			19ga NL	+.50	702
do	do	8.88	5.88			19ga NL	30	705
do	do	9.03	5.53	.109-135st	3.50	19ga NL	50	720
Tex. 528	Wes Tex. Tel. Coop.	10.00	6.00	.109-135st	4.00	19ga H88	+.05	800
Miss.506	Bay Springs	9.28	1.14	.109-135st	6.40	19ga H88		989
					1.70	22ga H88		
					.04	24ga H88		
		9.28	3.41	.109-135st		19ga H88		925
		7.020			1.70	22ga H88	+.08	
					*014	24ga H88		
	Subtotal		86.21	.109-135st	9-25	19ga NL		
	Bubcotar		15.34			19ga H88	B 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
			8.28	.080cw 40%		22ga NL	urp ghoos a	
			0.20	*OOOGM HOW	9	22ga H88		
					12.66		1	
					• 36	24ga NL 24ga H88		
	t in the elaphyride regional particular construction and appropriate company of the construction of			and the state of t	•57	Zuga noo		
	Totals for 17 loops	153.58	109.83		43.75			
	Average loop	9.03	6.46		2.57		46	766

with the state of the . . . Programme Carte St. Carl

	,		Open Wir	e Portion	Cable	Portion	Effec-	Loop Resis
Project Number	System	Loop Length Miles	Miles	Gauge and Material	Miles	Gauge and Loading		tance Ohms
	Zone	e 5, 10	to 12 m	niles from (Central	Office	1	
Colo.501	Wiggins Tel. Co.	10.00	9.25	.109-135 s		19ga NL	+.11	77
Kan. 531	United Tel. Assn.	10.18	9.48	.109-135	.70	22ga NL	+.03	84
Ga. 536	I I	11.76	11.48	.080 cw	.28	22ga NL	-4.28	53
do	do	11.59	10.53	.080 cw	1.06	22ga NL	-2.81	62 96
La. 504	LaSalle Tel. Co.	11.47	6.44	.109 st	1.35	19ga H44	40	30
			1.89	·10/t cm	1.79	22ga H44	23	86
do	do	10.42	1.14	.109 st	5.87	19ga H44	- 627	
	i accionate de la companya della companya della companya de la companya della com		2.08	.104 cw	1.33	22ga H44 22ga H44	+.01	92
do	do	11.17	6.68	.109 st	2,30	Sega mu		
		70 10	2.94	.104cw	6.71	19ga H44	+.11	90
Miss.506	Bay Springs	10.42	3.41	•109 50	.30	24ga H44	1	-
		יו כב	3.03	.109 st	6.70	19ga H44		91
do	do	11.55	1.52	.104 cw	.30	24ga H44		
	à.	11.17	3.28	.109 st	6.72	19ga H88	13	90
do	do	alada () da ()	.94	.104 cw	•23	24ga H88		
את רסס	Yadkinville	11.10		.109-135 s	1.60	22ga NL	+1.79	
NC 509		11.00	11.00	.109-135 s	st -		-1.50	7
N.Mex50li	do	10.90	9.40	1 4 / /	1.50	19ga NL	+1.40	1 -
do	do	10.86	7.36	A	3.50	19ga H88	60	
dp	do	11.00	6.00	.109-135	5.00	19ga H88	30	
Tex. 528	-	11.00	11.00	.109 ss	-	377	-1.65	
ION'S JEG		11.00		.104 cw	2.00	19ga NL	+ • 39	0
			14.00	.109 ss	F 00	30 1199	+ •50	9
		11.40		.109 ss	5.90	19ga H88	-3.50	4
Utah 501	Emery County	10.89	10.21	.080cw	•68	22ga NL	-7.70	-
	The same of the sa		205 15	700 7350	t 4.25	19ga NI		
	Subtotals		105.47	.109-135s	41.75	19ga H4L		
			32.22	.080 cw	4.32			
		t definition	14.37	• TOT CM	5.42		<u> </u>	
					1.08	24ga Hul	1	
	Total for 19 loops	208.88	152.06	Annella de la constitución de la	56.82			
	Average loop	10.99	8.00	A filtredgingham Africanismismismismismismismismismismismismismi	2.99		-1.51	1 8

. • 1 1 100 38 1,353; to Car

		The second second	Open Wir	e Portion	Cable 1	Portion	Effec-	Loop Resis-
Project Number	System	Loop Length Miles	Miles	Gauge and Material	Miles	Gauge and Loading	Trans- mission db	tance Ohms
	Zone 6							
Colo.501	Wiggins Tel. Co.	14.50		.109-135st	•75	19ga NL	+.75	988
		73.00	2.50	.104 cw			25	980
Ga. 536	Bullock County	13.00		.080-40%	3.03	22ga H44		925
0a. 550	Dullock Courtey	13.26		.080-40%	3.03	22ga H44	-1.63	945
Kan. 531	United Tel. Assn.	15.85	9.00	.109-135st	2.60	22ga H44	08	883
			4.25	.104 cw	0 01	19ga H44	02	926
La. 504	LaSalle Tel. Co.	12.59	3.98 3.88	.109-135st	2.94	22ga H44		,,,,
30	do	12.00		.109-135st		19ga H44		1,008
do	ao	22.00	2.08	.104 cw				
Miss.506	Bay Springs	12.69		.109-135st		19ga H44		997
			1.03	.104 cw	.30	24ga H44 19ga H44		974
do	do	13.07	4.17	.109-135st	6.25	22ga H44	4	714
			2021	• TOT CM	.19	24ga H44		
do	do	13.26	4.73	.109-135st		19ga H44	+.12	1,000
ao			2.09	.104 cw	.32	24ga H44	70	000
N.Mex504	Clovis Tel. Co.		13.00	.109-135st		10ge NI	+1.80	998
		13.00		.109-135st		19ga NL 19ga HLL	1	1,010
		12.86		.109-135st	1	19ga H4L	* }	1,035
mar C08	Wes Tex.Tel. Coop	1		.104cw30%	4.00	19ga H88	-1.00	649
Tex.528	do		1.2.00	.109-135			+.62	989
40			2.00	.104-cw30%		20 1100	+ 75	7 765
Tenn.544	Twin Lakes	12.08	5.23	.109-135		22ga H88	7.15	1,165
		The same of the sa	2.80	.104cw 40%			and the state of t	
	Subtotals		118.91	.109-135st	1.75	19ga NL		-
			31.90	.104 cw30%	14.69	19ga Hlil 22ga Hlil	+	
			19.98	.080 cw40%	.81		1	
					-	and a discount region to the sense region of t		
	Totals for 17 loops	223.91	170.79		53.15			
•	Average loop		10.05		3.12		14	1,000

notes of		Fortion	Cable	re Portion				1771-
	-BRETT	Sauge		Gausse		good		Project
				fairedsM				
	idb	noading		A DOLL AND DESAIL		12000000	and the second of the second o	
,		9927	to tan	ss from Cent		of SE	Zone 6	
884	27.4	IN SPOL		Jack 1-001.		18.50	.ol .leT enlysts	105 of old
086	79		***	Je30.1-001.				
925		Page Hill		204-080.	52.6	184.51	Bullock County	00. 536
240	E3.L-	Litt sass	2.03	201-080.	ES.01			
£d8	60. ×	121 S3SS		sole in doc			United Tel. Assa.	Kan . 531
				.109-135sb	3.98	12.59	LaSalle Tel. Co.	La. 50k
300.1:		19ga Hibi	27.8	Jeje L. Gol.	3,88	12,00		
2 10	2112/4 V	Arrest Colline	2100	NO HOL.	80.5	2000		
266.	[1]	19ga Hali	5.87	Ja201-901.		90.91.	Bay Springs	Miss.506
				and ilot.				
	70,0			Ja28.1-908.		13.07		
			26.	. 10h cw	98.8			
· net		श्यम् इप्रमुख	58"					
000 I	Shar	19ga Hub	6,12	1956FT-60T"		38.81		
*		Suga Bin	SEA	wa dol.			- N. Park - San Fra	1000 00 00
998		117 W TVF	A	382E.I-QOI.		13.00	GLOVIE Tel. Uo.	MINCHOLP M
OLO, I	.05.5+	19ga Di.	1.00	109-13580				
1,035		1.000 Hills	3,00	Jace 1-901.				
	00.1-	1988 1888		JOHONJOK.		00.61	Good . For ret sel	2001
-289				109-135		60. II	00	oh
				KIKWO-NOL.				
Tokkit	2504	88H as \$\$		1 28 E- RUI.	5.23	30.31	Tour Lakes	H.C. meT
				Not woner.				
		IN SHEE	1.75	-109-1350F	18:91		alajojduš	
	-			Motivo dos.				
				1000 callo	86.01			
					.70.79		ocals for 17 loops	
1. 10 c	1.5					TIEL	gool engrey.	
	h				tree -			

	The state of the s		Open Wi	re Rortion	Cable	Portion	Effec- tive	Loop
Project Number	System	Loop Length Miles	Miles	Gauge and Material	Miles	Gauge and Loading	Trans- mission db	Resis tance Ohms
	Zone 7, Over 14 Miles							
Ga. 536	Bullock County	14.09 18.02 15.76	11.06 17.60 15.72	.080 cw 40%	.42	22ga H88 22ga NL 22ga NL	-1.31 -1.99 -3.66	980 801 655
N.Mex504	Clovis Tel. Co.	15.00 15.00 15.00	15.00	.109-135 st .109-135 st .109-135 st	2.00	19ga NL 19ga H88	+ .10 + 3.40 + 2.20	1,140
Tex. 528	Wes Tex. Tel.Coop	16.00	9.00 7.00 10.50	.109-135 st .104cw 30% .109-135st	-		-1.06	929
		19.90 17.50 15.80	5.50 18.30 16.50 9.90	.104 cw 30% .104 cw 30% .104 cw 30% .104 cw 30%	1.60	19ga NL 22ga NL 19ga H88	+ .25 -1.29 + .0li	76' 738 838
	Subtotals		58.50 5 7. 20 44.38	.109-135st .104 cw 309 .080 cw 409		19ga NL 19ga H88 22ga NL 22ga H88		
	Totals for 11 loops	178.07	160.08		17.99			0.4
	Average loop	16.19	14.55		1.64		+ .34	93

Comparison Campa									
Project System Loop Hales And Stins State Trains Innex Inn				Cable		Open 161			
Ga. F.36 Ballock County 18.02 17.60 .080 cw h03 3.03 29ga 862 -1.31 980 18.02 17.60 .080 cw h03 .08 22ga 86 -3.66 655 15.76 15.76 10.00 10.0		-cday? covisaion		zofile	brus				
18.02 37.60 .080 ow hos02 22ga NL -3.65 655 655 0.090 ow hos00 22ga NL -3.65 655 655 0.000 15.00 15.00 15.00 10.00 10.00 13.00 10.00 10.00 13.00 10.00					IDS AL TOVO				
M.Merson Clovis Fel. Co. 15.00 13.00 109-135 at 2.00 19ga NL -3.00 1.170 15.00 13.00 109-135 at 2.00 19ga NL -3.00 1.170 15.00 10.00 109-135 at 1.00 19ga NB -2.20 1.180 16.00 10.50 10.50 10.90 19ga NB -3.06 929 15.00 10.50 10.50 10.00 19ga NB -3.25 736 17.50 18.50 10.00 22ga NB -3.25 736 18.50 18.50 10.00 22ga NB -3.25 736 18.50 18.50 10.00 22ga NB -3.25 736 18.50 18.50 10.00 22ga NB 236 1.00 2		22.14	REES No.	. 5. 6.	ROW wa 080.	17.60		Bullock County	
Tex. 528 21se Tex. Tel. Coop 16.00 9.00 .109-135 st -1.06 992 16.00 10.50 .109-135 st -1.60 992 16.00 10.50 .109-135 st -1.60 19gs NL -2.5 767 17.50 18.30 .10h cw 303 1.00 22ss NL -1.29 738 17.50 18.50 .10h cw 303 5.90 19gs NL -1.29 738 18.50 .10h cw 303 5.90 19gs NL -1.29 838 18.30 .10h cw 303 5.90 19gs NL -1.29 NL -1.	1,170		All eyel	00.5	ta 36.6-001.	15,00	35.00	Clovis Tel. Co.	N.Hex50h
Subtotals for 11 loops 178.07 160.08 20.0 10.0 19.0 10.0 10				47	109-135 st		00.00		
Subtotals for 11 loops178.07 160.08 13.03 17.99	767			1,60	ROE NO HOL.	5.50 28.30	00,01		
Totals ins 11 loops178.07 160.08 13.03 22ga H08		10 a 4	19/cs H06	5.90	ROE wa doc.	06*6		a faintein	
			All angle	9,90		53,50		83.8000000	
Westwee Toob 10°15 10°22 10°27 10°27 20°20				19.74		80,081	70.871		
	326	:12+		13.54			61'91		